

A Geomagnetic <contribution to Climate Change in this Century?

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Abstract Form

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There is a myth that all solar effects can be parameterised by the Sunspot number. This is not true. For example, the level of geomagnetic activity during this century was not proportional to the sunspot number. Instead there was a large systematic increase in geomagnetic activity, not reflected in the sunspot number. This increase occurred gradually over at least 60 years. The 11 year solar cycle variation was superposed on this systematic increase. Here we show that this systematic increase in activity is well correlated to the simultaneous increase in terrestrial temperature that occurred during the first half of this century. We discuss these findings in terms of mechanisms by which geomagnetics can be coupled to climate. These mechanisms include possible changes in weather patterns and cloud cover due to increased cosmic ray fluxes, or to increased fluxes of high energy electrons. We suggest that this systematic increase in geomagnetic activity contributed (along with anthropogenic effects and possible changes in solar irradiance) to the changes in climate recorded during this period.

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